

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 16

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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AND INTERFERENCES

Ex parte CHARLES EDWARD BOICE, JAMES DAVID GREENFIELD,
JOHN MARK KACZMARCZYK, AGNES YEE NGAI, and
STEPHEN PHILIP POKRINCHAK

Appeal No. 2001-1864
Application No. 09/255,892

ON BRIEF

Before BARRY, LEVY, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-29, which are all the claims in the application.

We affirm.

BACKGROUND

The invention is directed to method and apparatus for encoding a sequence of video data consistent with the MPEG standard for encoding. Claim 29 is reproduced below.

29. An article of manufacture comprising:

a computer program product comprising computer usable medium having computer readable program code means therein for use in encoding a sequence of video data, said computer readable program code means in said computer program product comprising:

computer readable program code means for causing a computer to effect storing multiple sets of quantization matrix tables, wherein said multiple sets of quantization matrix tables comprise separate, independent sets of quantization matrix tables, each set of quantization matrix tables comprising at least one intra matrix table and at least one non-intra matrix table;

computer readable program code means for causing a computer to effect quantizing the sequence of video data in a single pass using at least one set of quantization matrix tables of said multiple sets of quantization matrix tables; and

computer readable program code means for causing a computer to effect dynamically switching said quantizing during said single pass from using said one set of quantization matrix tables to using another set of quantization matrix tables of said multiple sets of quantization matrix tables.

The examiner relies on the following references:

Katayama	5,422,736	Jun. 6, 1995
Sasaki et al. (Sasaki)	5,530,478	Jun. 25, 1996
Hosono	5,796,438	Aug. 18, 1998 (filed Jun. 23, 1995)
Wheeler et al. (Wheeler)	5,825,680	Oct. 20, 1998 (filed Jun. 21, 1996)

Appeal No. 2001-1864
Application No. 09/255,892

Rick et al. (Rick)

5,987,179

Nov. 16, 1999
(filed Sep. 5, 1997)

Claim 29 stands rejected under 35 U.S.C. § 102 as being anticipated by Wheeler.

Claims 1-4, 10-12, 18-20, and 23-25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Katayama and Wheeler.

Claims 5, 6, 9, and 21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Sasaki.

Claims 7, 8, and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Rick.

Claims 13-17 and 26-28 stand rejected under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Hosono.

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 12) for a statement of the examiner's position and to the Brief (Paper No. 11) and the Reply Brief (Paper No. 13) for appellants' position with respect to the claims which stand rejected.

OPINION

In accordance with appellants' grouping of claims (Brief at 6), we select claims 29, 18, 21, 22, and 26 as representative of each respective group. See 37 CFR

§ 1.192(c)(7). See also In re McDaniel, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) ("If the brief fails to meet either requirement [of 37 CFR § 1.192(c)(7)], the Board is free to select a single claim from each group of claims subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim.").

In response to the section 102 rejection of claim 29 as being anticipated by Wheeler, appellants argue that the material at column 13 of the patent simply describes the MPEG standard which requires the use of an intra-coded matrix table and a non-intra-coded matrix table, and therefore requires switching from the intra table to the non-intra table during the encoding process. (Brief at 7-8.) According to appellants, Wheeler thus discloses but a single set of matrix tables, rather than multiple sets of quantization matrix tables, with each set comprising at least one intra matrix table and at least one non-intra matrix table, as required by claim 29. (Id. at 8-9.)

The examiner responds (Answer at 6) by pointing to Wheeler's description of the MQ quant value ranging from 1 to 31. Appellants respond in turn (Reply Brief at 2-4) that "MQ quant" is a singular value in accordance with the MPEG standard. Appellants argue that the MQ quant value is maintained in register 692 (Wheeler Fig. 7) and is distinct from the quantization table RAMs 690.

Claim 29 recites program code means "for causing a computer to effect storing multiple sets of quantization matrix tables." The claim further recites that the multiple sets of quantization matrix tables comprise separate, independent sets of quantization

matrix tables, with each set comprising at least one intra matrix table and at least one non-intra matrix table.

Wheeler discloses apparatus for encoding and decoding video data. The quantization unit (Fig. 7) includes Q table RAMs comprising intra-coded blocks and non-intra-coded blocks. The reference describes, at column 13, two levels of quantization using the quantization tables and the macroblock scaling factor MQQUANT.

In the preferred embodiment there are two quantization tables; one table is used when operating on intra-coded macroblocks, the other table is used on non-intra-coded macroblocks.

As shown in FIG. 7, the quantization tables are stored in Q table rams 690. The CPU is responsible for loading all Q table entries. During encode and decode the CPU loads the tables as required. Thus, the CPU is responsible for updating Q tables on video stream context switches.

Wheeler col. 13, ll. 24-32.

The claims measure the invention. SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (en banc). During prosecution before the USPTO, claims are to be given their broadest reasonable interpretation, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969).

Absent reading disclosed limitations into instant claim 29, we do not see how the recitations regarding the storage of multiple sets of quantization tables might be thought to distinguish over Wheeler. We agree with appellants to the extent that the Q table

RAMs are disclosed as containing only one set of quantization tables at any particular time. However, Wheeler also discloses that the CPU is responsible for updating the Q tables and loads the tables as required.

Appellants' arguments (e.g., Brief at ¶¶ bridging pages 8 and 9) could be read as positing that Wheeler contemplates one and only one set of quantization tables when encoding video data. If that is appellants' position, we consider it unfounded and, further, contrary to appellants' disclosure.

Appellants describe, in the last paragraph at page 2 of the specification, in description of the prior art (in the "Background" section), changing quantization matrix tables between pictures in a sequence based, for example, on a change in picture complexity from one frame to the next.¹ Particularly at odds with appellants' presumptive position in the Brief is the description at page 17, line 8 et seq. referring to the need for switching matrix table sets upon a scene change. In the Brief appellants now argue that the artisan would consider a scene change or context switch as referring to mere "switching between intra and non-intra tables...." (Brief at 8.)

We thus disagree with appellants' apparent interpretation of Wheeler. Further, although we can appreciate the differences between Wheeler's disclosure and appellants' disclosed invention, in our view the language of claim 29 does not express, nor require, those differences.

¹ Appellants' disclosed improvement (e.g., spec. at 14, ll. 28-30) is to provide memory space for multiple sets of quantizer matrix tables.

Appellants argue (Brief at 8-9) that their invention adds the ability to “dynamically switch” between complete sets of intra and non-intra tables “in real time, in a single pass without requiring stopping of the encoding process.”

Claim 29 recites quantizing the sequence of video data “in a single pass” using at least one set of quantization matrix tables and to effect dynamically switching the quantizing during the “single pass” from using one set of quantization matrix tables to using another set of matrix tables. Appellants do not point out, in the Brief’s “Summary of the Invention,” disclosure of the claimed “single pass,” other than reference to the quantizer of instant Figure 6. We note that the “single pass” language was added to the claims by the amendment filed March 10, 2000 (Paper No. 5). Appellants, at pages 7 and 8 of the amendment, contended that the language distinguished over description in Sasaki with respect to requiring at least two encoding passes in order to switch from one table to another.

However, Sasaki is not applied against instant claim 29. Appellants do not point out in Wheeler where there may be considered more than a single pass in quantizing a sequence of video data. Whether or not Wheeler may be deemed to stop “the encoding process” when switching tables, or switch tables “in real time,” is not relevant because the features are not present in claim 29.

Finally, we do not see how the CPU of Wheeler updating the Q tables does not fall within the meaning of “dynamically” switching tables. Even if appellants’ disclosure (spec. at 3, ll. 3-7) may be taken as equating “dynamic” with “real time,” we do not read

Wheeler's disclosure of updating tables to be anything other than in "real time."

Wheeler discloses a system meeting relatively high bandwidth requirements (e.g., col. 4, ll. 1-9; col. 13, ll. 53-56; col. 15, ll. 46-52) to thus provide real-time MPEG compression (col. 5, ll. 25-30).

We have considered all of appellants' arguments in response to the rejection of claim 29. We are not persuaded that the examiner's finding of anticipation is in error. We therefore sustain the rejection of claim 29 under 35 U.S.C. §102 as being anticipated by Wheeler.

We turn to the section 103 rejection of claims 1-4, 10-12, 18-20, and 23-25 under 35 U.S.C. § 103 as being unpatentable over Katayama and Wheeler. Appellants argue in response with respect to a deemed lack of suggestion to combine the teachings of the references.

Claim 18 sets forth a method with language similar to that of claim 29. In view of our findings with respect to the teachings of Wheeler (supra), we do not see anything in claim 18 that may distinguish over Wheeler. The claim recites "providing storage for holding multiple sets of quantization matrix tables...." However, there is nothing in the step of "providing," nor anything else in the claim, that would require multiple sets be held in memory (e.g., RAMs) at the same time.

Since all limitations of claim 18 are taught by the prior art applied, we sustain the section 103 rejection over Katayama and Wheeler. Claims 1-4, 10-12, 19-20, and 23-25 fall with claim 18.

Appellants present no substantive separate arguments in response to the final three grounds of rejection applied against the remaining claims (5, 6, 9, and 21; 7, 8, and 22; and 13-17 and 26-28).

In particular, with respect to representative claim 21, appellants have not shown error in the examiner's finding (Final Rejection at 4) that Sasaki would have suggested the claimed default quantization matrix table. With respect to representative claim 22, appellants have not shown error in the examiner's finding (id. at 5) that Rick would have suggested the claimed user's custom quantization matrix table.² With respect to representative claim 26, appellants have not shown error in the examiner's finding (id.) that Hosono would have suggested the claimed compressed bitstream.

We thus sustain the rejection of claims 5, 6, 9, and 21 under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Sasaki, the rejection of claims 7, 8, and 22 under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Rick, and the rejection of claims 13-17 and 26-28 under 35 U.S.C. § 103 as being unpatentable over Katayama, Wheeler, and Hosono.

CONCLUSION

The rejection of claim 29 under 35 U.S.C. § 102 is affirmed. The rejection of claims 1-28 under 35 U.S.C. § 103 is affirmed.

² In view of the alternative (i.e. "or") language in claims 21 and 22, either of Sasaki or Rick could have been applied against both claims.


Appeal No. 2001-1864
Application No. 09/255,892

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

LANCE LEONARD BARRY
Administrative Patent Judge


STUART S. LEVY
Administrative Patent Judge


HOWARD B. BLANKENSHIP
Administrative Patent Judge

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Appeal No. 2001-1864
Application No. 09/255,892

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